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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,536	03/18/2004	Kenji Hayashi	MLPO:003	5659

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EXAMINER	
DZIERZYNSKI, EVAN P	

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/803,536	HAYASHI ET AL.	
	Examiner	Art Unit	
	Evan Dzierzynski	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/1/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/01/2006 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7, 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toda et al. (US Pat 6693380) in view of Couillaud et al. (US Pub 2002/0075691).

Toda et al. teaches a light axis adjusting apparatus for a vehicle headlamp (figure 1) comprising a light axis adjustor for adjusting a light axis of the headlamp of a vehicle 18, an operating state detector for detecting an operating state of the vehicle 108, an inclined state detector for detecting an inclined state of the vehicle relative to a road surface 102, a change amount computing unit for computing an amount of change of the inclined state during a halt of the vehicle based on results of detection of the inclined state detector when the operating state detector detects a stop state of the vehicle (column 5, line 50+), and a control device for controlling the light axis adjustor based on

the results of detection of the inclined state detector and results of computation of the change amount computing unit (column 5, line 7+). Toda fails to disclose that the inclined state sensor is mounted in front of or forwardly of a front axle of the vehicle and fails to teach that the inclined stated detector relies exclusively one the inclined state sensor to detect an inclined state of the vehicle relative to a road surface. Couillaud et al. teaches a similar device which shows an inclined state sensor 2 that is in front of a front axis of the vehicle, and that an inclined state detector 4 relies exclusively on the inclined state sensor 2 (paragraph 36) to detect an inclined state of the vehicle relative to a road surface. It would have been obvious for one of ordinary skill in the art to use the sensor of Couillaud et al. the light axis adjusting device of Toda et al. in order to reduce the number of parts and to keep the parts of the device closer to the light source, so that the parts can be more easily replaced by having them all in the same location.

As for claim 2, Toda et al. further teaches that the change amount computing unit includes an average value calculator for calculating average values by performing moving average processing of the results of detection of the inclined state detector (102, 104). Toda et al. also teaches a memory device for storing convergent average values obtained when the average values converge within a predetermined range 20. Toda et al. also teaches an inclined state change amount setting device for setting a difference between a maximum value and a minimum value of the convergent average values as the amount of change of the inclined state (column 5, line 34+).

As for claim 3, Toda et al. teaches the light axis adjusting apparatus for a vehicle headlamp as discussed above in claim 2, wherein the control device includes an updating device for updating the results of detection of the inclined state detector by taking the difference in the results of detection when the amount of change is not less than a set amount of change which as been present (column 4, lines 58+).

As for claim 4, Toda et al. teaches the light axis adjusting apparatus for a vehicle headlamp as discussed above, wherein the operating state detector includes an average value computing unit for computing an average value of the inclined state during driving based on the results of detection of the inclined state detector when the operating state detector detects a driving state of the vehicle (column 5, line 34+) and the control device controls the light axis adjustor based on the results of detection of the inclined state detector and results of computation of the average value computing unit (column 5, line 7+).

As for claim 5, Toda et al. teaches a light axis adjusting apparatus for a vehicle headlamp (figure 1) comprising a light axis adjustor for adjusting a light axis of the headlamp of a vehicle 18, an operating state detector for detecting an operating state of the vehicle 108, an inclined state detector for detecting an inclined state of the vehicle relative to a road surface 102, a change amount computing unit for computing an amount of change of the inclined state during a halt of the vehicle based on results of detection of the inclined state detector when the operating state detector detects a stop state of the vehicle (column 5, line 50+), and a control device for controlling the light axis adjustor based on the results of detection of the inclined state detector and results

of computation of the change amount computing unit (column 5, line 7+), wherein the operating state detector includes an average value computing unit for computing an average value of the inclined state during driving based on the results of detection of the inclined state detector when the operating state detector detects a driving state of the vehicle (column 5, line 34+)

Toda et al. also teaches that the average value computing unit includes a collector for collecting a specified number or more of the results of detection of the inclined state detector during driving (column 4, line 23+), and teaches a method for calculating results of the collection, including a control device which has an updating device for updating the results of detection of the inclined state detector to the average value (column 4, line 18+). Toda et al. fails to teach a standard deviation calculator for calculating the results. Couillaud teaches a light axis adjusting apparatus which has a standard deviation calculator for calculating a standard deviation based on results of its collection which also includes a setting device for finding an average value of the results when the standard deviation is not more than a set standard deviation (column 8, lines 30+). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the standard deviation method of Couillaud with the device of Toda et al. because it is necessary to have a way of calculating the data, and using standard deviation values is a well-known statistical method for making calculations.

Toda et al. teaches a light axis adjusting apparatus for a vehicle headlamp (figure 1) comprising a light axis adjustor for adjusting a light axis of the headlamp of a vehicle 18, an operating state detector for detecting an operating state of the vehicle 108, an

inclined state detector for detecting an inclined state of the vehicle relative to a road surface 102, a change amount computing unit for computing an amount of change of the inclined state during a halt of the vehicle based on results of detection of the inclined state detector when the operating state detector detects a stop state of the vehicle (column 5, line 50+), and a control device for controlling the light axis adjustor based on the results of detection of the inclined state detector and results of computation of the change amount computing unit (column 5, line 7+)

Toda et al. teaches the light axis adjusting apparatus for a vehicle headlamp as discussed above, further comprising a calculator for collecting a specified number or more of the results of detection of the inclined state detector and making calculations when the operating state detector detects a stop state of the vehicle (column 5, line 50+). Toda et al. also teaches a control device that includes an updating device, which updates the results of detection of the inclined state detector to update the results of detection, when the calculation is greater than the set calculation (column 4, line 18). Toda et al. fails to teach calculations to be from standard deviations, as discussed above. Couillaud teaches a light axis adjusting apparatus which has a standard deviation calculator for calculating a standard deviation based on results of its collection which also includes a setting device for finding an average value of the results when the standard deviation is not more than a set standard deviation (column 8, lines 30+) and an average value computing unit which, when the standard deviation has been judged to be not greater than a set standard deviation that has been preset, computes an average value of the results of detection for which the standard deviation has been

judged to be not greater than the set standard deviation (column 8, lines 30+). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the standard deviation method of Couillaud with the device of Toda et al. because it is necessary to have a way of calculating the data, and using standard deviation values is a well-known statistical method for making calculations.

As for claim 7, Toda et al. teaches the light axis adjusting apparatus for a vehicle headlamp as discussed above, wherein the inclined stated detector includes an inclination sensor for detecting an inclination angle of the vehicle relative to the road surface 14. Toda et al. fails to teach a filter device, but Couillaud teaches a filter device for removing high frequency components of data on the inclination angle detected by the inclination sensor (Ba, C and Bd). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the filtering device of Couillaud with the light axis adjusting apparatus of Toda et al. in order to provide the apparatus with a way to filter out high frequency components of data.

As for claim 10, Toda et al. and Couillaud teach the light axis adjusting apparatus for a vehicle headlamp as discussed above. Couillaud teaches the inclined state detector as a laser sensor (column 28, line 30+).

As for claim 11, Toda et al. teaches the light axis adjusting apparatus for a vehicle headlamp with the inclined state detector placed on a vehicle front portion of the frame (figure 1). Toda et al. does not teach the vehicle being a truck with a cab and frame. However, it would have been obvious for one of ordinary skill in the art to take

the light axis adjuster and place it on a truck with a cab, since trucks with cabs would benefit from having an apparatus to adjust their light axis.

As for claim 12, Toda et al. teaches a light axis adjusting apparatus for a vehicle headlamp (Fig 1), comprising a light axis adjusting means for adjusting a light axis of the headlamp of a vehicle 18, an operating state detecting means for detecting an operating state of the vehicle 108, an inclined state detection means for detecting an inclined state of the vehicle relative to a road surface 102. Toda et al. also discloses a change amount computing means for computing an amount of change of the inclined state during a halt of the vehicle based on results of detection of the inclined state detecting means when the operating state detecting means detects a stop state of the vehicle (column 5, line 50+), and a control means for controlling the light axis adjusting means based on the results of detection of the inclined state detecting means and results of computation of the change amount computing means (column 5, line 7+). Toda fails to disclose that the inclined state sensor is mounted in front of or forwardly of a front axle of the vehicle. Toda fails to disclose that the inclined state sensor is mounted in front of or forwardly of a front axle of the vehicle and fails to teach that the inclined stated detector relies exclusively one the inclined state sensor to detect an inclined state of the vehicle relative to a road surface. Couillaud et al. teaches a similar device which shows an inclined state sensor 2 that is in front of a front axis of the vehicle, and that an inclined state detector 4 relies exclusively on the inclined state sensor 2 (paragraph 36) to detect an inclined state of the vehicle relative to a road surface. It would have been obvious for one of ordinary skill in the art to use the sensor

of Couillaud et al. the light axis adjusting device of Toda et al. in order to reduce the number of parts and to keep the parts of the device closer to the light source, so that the parts can be more easily replaced by having them all in the same location.

As for claim 13 and 14, Toda et al. teaches a light axis adjusting apparatus for a vehicle headlamp (figure 1) comprising a light axis adjustor for adjusting a light axis of the headlamp of a vehicle 18, an operating state detector for detecting an operating state of the vehicle 108, an inclined state detector for detecting an inclined state of the vehicle relative to a road surface 102, a cross member 35L, 35R, a change amount computing unit for computing an amount of change of the inclined state during a halt of the vehicle based on results of detection of the inclined state detector when the operating state detector detects a stop state of the vehicle (column 5, line 50+), and a control device for controlling the light axis adjustor based on the results of detection of the inclined state detector and results of computation of the change amount computing unit (column 5, line 7+). Toda fails to disclose that the inclined state sensor is mounted in front of or forwardly of a front axle of the vehicle. Toda fails to disclose that the inclined state sensor is mounted in front of or forwardly of a front axle of the vehicle and fails to teach that the inclined stated detector relies exclusively one the inclined state sensor to detect an inclined state of the vehicle relative to a road surface. Couillaud et al. teaches a similar device which shows an inclined state sensor 2 that is in front of a front axis of the vehicle, and that an inclined state detector 4 relies exclusively on the inclined state sensor 2 (paragraph 36) to detect an inclined state of the vehicle relative to a road surface. It would have been obvious for one of ordinary skill in the art to use

the sensor of Couillaud et al. the light axis adjusting device of Toda et al. in order to reduce the number of parts and to keep the parts of the device closer to the light source, so that the parts can be more easily replaced by having them all in the same location.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toda et al. and Couillaud as applied to claim 1 above, and further in view of Stam (US Pub 2003/0138132).

Toda et al and Couillaud teach the light axis adjusting apparatus for a vehicle headlamp as discussed above, but both fail to teach the inclination sensor as an ultrasonic sensor having a transmitter and a receiver. Stam teaches an inclination sensor as an ultrasonic sensor having a transmitter and a receiver (paragraph 0202). It would have been obvious to combine the ultrasonic sensor with transmitter and receiver of Stam with the device of Toda et al. in order to provide an alternate means of detecting the inclined state of the road surface.

As for claim 9, Toda et al., Couillaud and Stam teach the light axis adjusting apparatus for a vehicle headlamp as discussed above. Stam teaches the transmitter and receiver are a pair of ultrasonic sensors placed in a vehicle width direction (figure 1). Stam does not specifically teach a plurality of pairs of ultrasonic sensors, but it would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the sensor of Stam to make a plurality since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. It is also obvious to place the

ultrasonic sensors in the longitudinal direction of the vehicle since the device pertains to axis adjusting headlights, which are located on the front of the vehicle.

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kayano et al (US Pat 6870319) discloses an optical axis adjusting system for a vehicle headlamp that also includes a cross member for mounting the device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evan Dzierzynski whose telephone number is (571)-272-2336. The examiner can normally be reached on Monday through Friday 7:00 am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on M-F (571)-272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Evan Dzierzynski

1/11/2006

RENEE LUEBKE
PRIMARY EXAMINER